

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): An air-compatible ceramic heater for heating a semiconductor wafer, comprising:

a ceramic substrate, on a surface of which ~~or inside which~~, a heating element pattern is formed,

wherein said ceramic substrate comprises a ceramic sintered body containing at least one of Na, B, and Y as an impurity element,

said ceramic heater is constituted to have a structure such that a convex body or a convex portion which can ~~make a point~~ contact ~~with a~~ the semiconductor wafer is formed on the surface of said ceramic substrate ~~so as to provide only one point of contact to the semiconductor wafer at the convex body or the convex portion,~~

said heating element pattern including a heating element layer and a protective layer protecting the heating element layer from oxidation, and

the semiconductor wafer can be held apart from a surface of said ceramic substrate and heated by heat of said ceramic substrate in an oxygen-containing ambient.

Claim 2 (Currently Amended): An air-compatible ceramic heater for heating a semiconductor wafer, comprising:

a ceramic substrate, on a surface of which ~~or inside which~~, a heating element pattern is formed,

wherein

said ceramic substrate comprises a ceramic sintered body containing at least one of Na, B, and Y as an impurity element,

said ceramic heater is constituted to have a structure such that a face of said ceramic substrate on which no heating element is formed or one face of said ceramic substrate is made to be a heating surface,

a convex body or a convex portion which can ~~make a point contact with a~~ the semiconductor wafer is formed on the surface of said ceramic substrate ~~so as to provide only one point of contact to the semiconductor wafer at the convex body or the convex portion,~~

said heating element pattern including a heating element layer and a protective layer protecting the heating element layer from oxidation, and

a the semiconductor wafer can be held apart from said heating surface and heated by heat of said ceramic substrate in an oxygen-containing ambient.

Claims 3-26 (Canceled)

Claim 27 (Currently Amended): An air-compatible ceramic heater for heating a semiconductor wafer, comprising:

a ceramic substrate, on a surface of which ~~or inside which,~~ a heating element pattern is formed,

wherein

said ceramic substrate comprises a ceramic sintered body containing at least one of Na, B, and Y as an impurity element,

said ceramic heater is constituted to have a structure such that a convex body or a convex portion, which has at least one of a conical shape, a pyramidal shape, a spire shape, a spherical shape, and hemispherical shape, is formed on the surface of said ceramic substrate,

said heating element pattern including a heating element layer and a protective layer protecting the heating element layer from oxidation, and

a the semiconductor wafer can be held apart from a surface of said ceramic substrate and heated by heat of said ceramic substrate in an oxygen-containing ambient.

Claim 28 (Currently Amended): An air-compatible ceramic heater for heating a semiconductor wafer, comprising:

a ceramic substrate, on a surface of which ~~or inside which~~, a heating element pattern is formed,

wherein

said ceramic substrate comprises a ceramic sintered body containing at least one of Na, B, and Y as an impurity element,

said ceramic heater is constituted to have a structure that a face of said ceramic substrate on which no heating element is formed or one face of said ceramic substrate is made to be a heating surface,

a convex body or a convex portion, which has at least one of a conical shape, a pyramidal shape, a spire shape, spherical shape, and a hemispherical shape, is formed on the surface of said ceramic substrate,

said heating element pattern including a heating element layer and a protective layer protecting the heating element layer from oxidation, and

a the semiconductor wafer can be held apart from said heating surface and heated by heat of said ceramic substrate in an oxygen-containing ambient.

Claim 29 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28, further comprising:

a through hole, in which a supporting pin configured to hold the semiconductor wafer is passed through, is formed in said ceramic substrate.

Claim 30 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,

wherein

said convex body or said convex portion is configured to hold the semiconductor wafer 5 to 5000 μm apart from the surface or the heating surface of said ceramic substrate.

Claim 31 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,

wherein said ceramic substrate comprises at least one of nitride ceramics, carbide ceramics, and oxide ceramics.

Claim 32 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,

wherein said ceramic substrate comprises a rare earth element oxide as a sintering aid.

Claim 33 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,

wherein said ceramic substrate comprises 0.1 to 10% by weight of a sintering aid.

Claim 34 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,

wherein said ceramic substrate comprises yttrium.

Claim 35 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,
wherein said ceramic substrate comprises 200 to 5000 ppm of carbon.

Claim 36 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,
wherein said ceramic heater is configured to be used at a temperature of 100°C or higher.

Claim 37 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,
wherein said ceramic heater is configured to be used at a temperature of 200°C or higher.

Claim 38 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,
wherein said heating element pattern comprises a metal foil or a metal wire.

Claim 39 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28,
wherein said heating element pattern comprises metal particles or a conductive ceramic.

Claim 40 (Previously Presented): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28;

wherein said heating element pattern is a pattern of concentric circles.

Claim 41 (New): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28;

wherein the protective layer comprises a metal including at least one of Au, Ag, Pd, Pt, and Ni.

Claim 42 (New): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28;

wherein the protective layer comprises a glass layer.

Claim 43 (New): The ceramic heater for heating a semiconductor wafer according to any of Claims 1, 2, 27, and 28;

wherein the heating element layer comprises sintered metal and metal oxide particles

Claim 44. (New): The ceramic heater for heating a semiconductor wafer according to Claim 42, wherein the metal oxide particles comprise at least one of lead oxide, zinc oxide, silica, boron oxide, alumina, yttria, and titania.

Claim 45. (New): The ceramic heater for heating a semiconductor wafer according to Claim 42, wherein the metal oxide particles comprise less than 100 parts by weight of the metal and metal oxide particles.